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ABSTRACT

This research study addressed four issues relating to subject searching in online catalogs: faculty and student use of subject searching in library catalogs; users' knowledge of and use of the Library of Congress Subject Headings List (LCSH) in a controlled subject heading search; strategies for teaching effective subject searching; and users' preferences for improvements to achieve more effective subject searching. The researchers surveyed student and faculty subject searching patterns in card and online catalogs in a university setting; analyzed requirements for improving subject access in library catalogs; and designed, implemented, and measured the effectiveness of two models (slide-tape and library research workbook) for instruction in principles of subject searching and the use of LCSH. The report includes a discussion of the research methodology (including objectives, populations, and samples for the study; data collection; questionnaires for both the student and faculty populations; pre- and posttests and slide-tape evaluations for the student population; and development of research instruments); reports of the findings for both the student and faculty surveys; and a summary and conclusions. Appendices include the questionnaires and overall results, questionnaire cross-tabulations (including selected tables), and copies of the pretest, posttest, and slide-tape evaluation form. (THC)

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STUDENT AND FACULTY SUBJECT SEARCHING IN A UNIVERSITY ONLINE PUBLIC CATALOG

A Report to the Council on Library Resources

Carolyn O. Frost

August 1985

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SUMMARY

This research study had in mind four concerns relating to subject searching in online catalogs: 1) faculty and student use of subject searching in library catalogs, 2) users' knowledge of and use of the Library of Congress Subject Headings List (LCSH) in a controlled subject heading search, 3) strategies for teaching effective subject searching, and 4) users' preferences for improvements to achieve more effective subject searching in catalogs.

To address these concerns, we surveyed student and faculty subject searching patterns in card and online catalogs in a university setting, surveyed requirements for improving subject access in library catalogs, and designed, implemented, and measured the effectiveness of two models for instruction in principles of subject searching and use of LCSH. The research project was carried out at the M.D. Anderson Library of the University of Houston-University Park (UH-UP) by Carolyn O. Frost, Associate Professor of Library Science at the University of Michigan.

Previous researchers have identified subject searching patterns, needs, and difficulties among various user groups, and we attempted to see if these patterns were prevalent in student and faculty user groups at UH-UP - a setting in which an online catalog providing subject access had been in operation for a year and a half. We assumed that major prerequisites to successful subject searches were the identification of correct and appropriate subject terms, and an understanding of principles of controlled and derived subject terms; we attempted to see if instructional aids could address these needs.

Thus, the project involved: 1) development and testing of a chapter on subject searching in a library skills workbook used in core English courses for freshmen at UH-UP;
2) development and evaluation/testing of a slide-tape presentation on subject searching in library catalogs;
3) administration of a questionnaire to juniors, seniors, and graduate students from the UH-UP campus;
4) administration of a questionnaire to faculty members in selected disciplines at the UH-UP campus.

The research was supported by a grant from the Council on Library Resources, for the duration of the year beginning July 1984. Some key findings were as follows:

A majority of students make frequent use of subject searching. Title searching is also frequently used. As previous studies have indicated, faculty members make relatively little use of subject searching.

Faculty members indicated that their principal uses of subject searching in the library's catalog were: interdisciplinary research, update of publications in their area of specialization, and familiarization with materials within the faculty member's

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discipline, but outside the current area of specialization. To a lesser extent, the subject search is used for familiarization with materials outside the faculty member's own discipline.

No single predominant reason emerged as to why subject searching is seldom or never used by some faculty members. About one third of non-users felt that author and title searches were adequate for their needs.

Our findings showed that students are largely unaware of LCSH as the catalog's source of controlled subject terms. Faculty members make relatively infrequent use of LCSH and prefer instead to search under terms from reference sources in their disciplines as well as under terms that come to mind.

Findings suggest that concepts essential to effective subject searching be conveyed through instructional aids. Both the library skills workbook as well as the slide-tape presentation proved effective in teaching basic skills in subject searching.

For both faculty and students in our study, the three enhancements users would most like to see to improve subject searching in the catalog were: 1) Boolean search capabilities, 2) display of or access to a list of terms related to the user's topic, and 3) inclusion of a brief summary of the book's content.

ACKNOWLEDGEMENTS

The author would like to acknowledge the assistance of many who have helped make this study possible.

Financial support for this project was provided by the Council on Library Resources.

Kathleen Gunning was an invaluable resource in the planning of the research design, in assisting in the administrative procedures necessary for the implementation of the study, and in commenting on drafts of the survey instruments.

In the production of the slide-tape, the Audio Visual Services Department of the University of Houston-University Park Libraries gave advice and encouragement in the design of the slide-tape, and greatly assisted in expediting its production. Special thanks are due to Joe Schroeder and Jim Joplin. The Libraries' User Education Editorial Board provided useful suggestions for the earlier drafts of the slide-tape narrative. Chere Sutton acted as model in the photographing of the slides.

C. Brigid Welch and the Library Research Workbook Taskforce assisted in authoring the revision of the Workbook's catalog use sections.

The University's Counseling and Testing Division provided advice and support in the computer analysis of the data.

Recognition is also due to Dell Stewart, research assistant, whose resourcefulness and dedication was much appreciated in various stages of the research implementation and data tabulation.

Contents

Introduction 1

Research Design 3

Findings
- Faculty Survey 7
- Student Surveys 14

Summary and Conclusions 20

Appendices
- Questionnaire Instruments and Overall Results 23
- Questionnaire Cross-tabulations - Selected Tables 29
- Slide-tape Evaluation Instruments 36

INTRODUCTION

An emerging focal point in the study of online public access catalogs is the once long-neglected problem of subject access. In the comprehensive survey of 29 public access online catalogs sponsored by the Council on Library Resources in 1982, the priority assigned by catalog users to subject access emerged as a finding with implications at once intriguing and challenging. Users indicated as one of the most desired features the ability to view a list of terms related to their search, and indeed, such a list takes on a signal importance in an online environment since most systems utilizing controlled headings will require the user to enter specific and precisely formulated search terms.

For most academic and research libraries, the source of controlled terms for an online system will be the Library of Congress Subject Headings List (LCSH), and therefore, for users of most online catalogs in an academic and research environment, the list of terms related to a patron's search will be the LCSH. The LCSH, however, was created as a tool for professionally trained catalogers, and intended to serve purposes related to the creation rather than the retrieval of bibliographic data. It is clear that shortcomings in the content, structure and format of LCSH have proved to be stumbling blocks in utilizing this tool in catalog subject searching. Major revisions will be needed before LCSH can be used effectively by patrons without benefit of instruction. However, to date such costly overhauls are not likely to come about in the immediate future. While much attention has been focused on larger scale solutions, some emphasis might still be placed on dealing with the problem through a more immediate, short-term approach.

If we assume that subject access to an index of controlled terms can be made more effective through the use of LCSH, and if at present that list will remain in its present form for most libraries, then a key challenge is to make LCSH more intellectually accessible to library patrons.

In this study we: 1) surveyed student and faculty subject searching patterns in card and online catalogs in a university setting, 2) surveyed requirements for improving subject access in library catalogs, and, 3) designed, implemented, and measured the effectiveness of two models for instruction in principles of subject searching and use of LCSH. The research project was carried out at the M.D. Anderson Library of the University of Houston-University Park (UH-UP) by Carolyn O. Frost, Associate Professor of Library Science at the University of Michigan, with the assistance of Kathleen Gunning, Assistant Director for Public Services and Collection Development at the UH-UP.

Previous Research

Recognition of the importance of subject searching in online catalogs is evidenced by the attention that this area has received in

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recent research. Users' preference for searching by subject was one of the most surprising findings revealed in the 29-library wide survey of online catalogs sponsored by the Council on Library Resources [1]. In this study, researchers learned that 57% of online catalog users were searching for materials by subject. These findings were borne out in other studies as well: at the Library of Congress, National Library of Medicine, Virginia Tech, and Ohio State University, subject searching was found to be the preferred access approach of library users. Other studies revealed a finding yet more remarkable: even in online catalogs which offered no subject access, large percentages of users stated that they were looking for materials on a subject [2].

In questionnaire surveys as well as in focused group interviews, research revealed that, while users preferred searching by subject, they experienced substantive difficulties in identifying correct subject terms, and in matching their terms with the catalog's language. At the same time, researchers found that, for a majority of users, the library's source of controlled subject headings remains intellectually inaccessible. Steinberg and Metz found that only 28% of Virginia Tech catalog users were aware that subject searching is possible only by using LCSH terms [3]. Markey, in an analysis of access points entered by users of online catalogs at Syracuse, found that most access points could be categorized as "whatever popped into the searchers' mind", rather than terms or variants of terms found in LCSH [4, p. 65-72]. Pritchard's study showed that at the Library of Congress, half of the online catalog users surveyed answered that they had browsed randomly under words they knew [5].

Other aspects of our study - user education for online catalogs, and faculty use of subject searching - have not been as central in recent research in online catalogs. At the time of this study, only one major research project addressing the role of user education in online catalogs was identified: Nielsen and Baker's CLR-funded study to develop a model for online catalog user education was still in progress [6].

Markey's analysis of data gathered in a CLR-sponsored survey included graduate students and faculty members at Ohio State University and Syracuse. Her analysis revealed that these user groups frequently employed known-item access points in online catalog searches. No study to date, however, has focused on subject searching needs of faculty members in particular.

In our study, we identified subject searching patterns, needs, and difficulties as identified by previous researchers and attempted to se if these were prevalent in student and faculty user groups at UH-UP - a setting in which an online catalog providing subject access had been in operation for a year and a half. We assumed that major prerequisites

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to successful subject searches were the identification of correct and appropriate subject terms, and an understanding of principles of controlled and derived subject terms; we attempted to see if instructional aids could address these needs.

The research was supported by a grant to assist faculty/librarian cooperative research. The CLR grant funding was awarded for the duration of the year beginning July 1984.

RESEARCH DESIGN

Objectives

The overall objective of the research was to examine factors related to subject searching success in online catalogs. Three major areas of concern were addressed: 1) the effectiveness of instructional aids in teaching library users concepts essential to successful subject searching, 2) patterns of subject searching use in card and online catalogs, 3) users' perceptions of the subject search process and their preferences for catalog enhancements to improve subject access. Specific components of these areas included:

1) measuring the effectiveness of a print-based medium to convey subject access concepts
2) measuring the effectiveness of an audio-visual medium
3) surveying subject searching use of faculty members and of students
4) asking students and faculty members to indicate their preferences for catalog or system enhancements to facilitate subject searching
5) identifying factors related to infrequent or non-use of catalog subject searching
6) ascertaining students' awareness of the LCSH as a source of controlled subject terms
7) ascertaining faculty members' level of use of LCSH as a source for catalog subject searching
8) ascertaining faculty members' motivation for catalog subject searching.

To address questions arising from these areas of concern, the research involved:

1) development and testing of a chapter on subject searching in a library skills workbook used in core English courses for freshmen
2) development and evaluation/testing of a slide-tape presentation on subject searching in library catalogs
3) administration of a questionnaire to juniors, seniors, and graduate students
4) administration of a questionnaire to faculty members in selected disciplines

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FACULTY QUESTIONNAIRE

Population and Sample for the Study

In defining the parameters of the faculty sample, we decided to include faculty members from those areas we considered most likely to use monographic literature and therefore most likely to use the catalog. We assumed that faculty from the humanities and social sciences would best fit this criterion. In addition, we included in the sample faculty from selected professional schools - Business Administration, Education, and Social Work - which we felt were also likely to make use of monographic literature. (After the study was underway, we learned from subject librarians that faculty members in computer science and some of the sciences were also users of monographic literature. We hope to include these and other disciplines in a follow-up study.)

The study excluded teaching and research assistants, part-time instructors, and faculty below the "tenure-track" ranks of assistant professor. A faculty-staff directory for UH-UP served as a list from which the sample could be drawn. All faculty members from the disciplines within Humanities and Fine Arts, Social Sciences, Business Administration, Social Work, and Education, and with ranks of assistant professor through full professor were included. The resulting sample population was 302 faculty members.

Data Collection

A brief questionnaire was designed to address the areas related to the research objectives. Areas covered in the questionnaire included: use of the library, use of the card and online catalogs, use of the subject search in card and online catalogs, use of keyword search in the online catalog, circumstances under which subject searching was most likely to take place, sources of terms used for subject searching, and features most desired for improved subject searching. Faculty members who were infrequent or non-users of subject searching were asked to indicate reasons for lack of use. Most questions were multiple choice, with an opportunity to provide free-form comments. Faculty members were asked to indicate their discipline and area of specialization. Rank was determined by comparing the questionnaire number with the distribution list derived from the staff directory. The questionnaire was pre-tested on faculty members from other universities.

Frost and her assistant mailed a questionnaire, a cover-letter explaining the purpose of the research, and a self-addressed envelope to each faculty member in the sample. Questionnaire sets were mailed on May 2, 1985 through the campus mail, and survey participants were asked to return the responses by campus mail within two weeks. Because of the need to avoid conflict with another survey of the faculty planned by the Library, the questionnaires could not be mailed until the final week of the spring term. Because many faculty members would not be returning until the beginning of the fall term, no follow-up mailing was made.

One hundred twenty-two responses were received. Of these, 10 arrived too late to be tabulated. Some departments returned questionnaires addressed to faculty members no longer at the University; there were 15 such instances. The final number of usable questionnaires was 112. Subtracting the number of questionnaires retured from "departing" faculty members, the original sample of 302 was reduced to 287. The response rate was 43%.

Responses for both questionnaires were coded on General Purpose NCS (National Computer Systems) answer sheets. Computer analysis was provided by the Test Scoring and Analysis Department of the University's Counseling and Testing Division using the Statistical Package for the Social Sciences.

QUESTIONNAIRES, PRE- AND POST-TESTS, AND SLIDE-TAPE EVALUATIONS FOR STUDENT POPULATION

Population and Sample for the Study

The population sample was much smaller than originally intended. Our initial plan was to have the slide-tape demonstration and evaluation take place in English classes which participate in the Library Research Workbook Pilot Project and which include instruction in the use of the Library's catalogs. Subsequently, changes in the administration of this project and a policy limiting the amount of time to be devoted to library instruction eliminated the possibility of drawing a sample from students in the core English classes. It was also not feasible to include the slide-tape demonstration as part of the formal user education program in the Library.

Since UH-UP is a commuter campus, and a large percentage of its students have full or part-time jobs in addition to course work, we decided not to rely on volunteers. At first, we offered an inducement of five dollar coupons good towards a data base search in the Library's reference department, but this offer generated little interest, probably because most students were not aware of the purpose of data base search services. Instead, we offered checks for five dollars, and relied on posters, flyers, and ads in the student newspaper for publicity.

Delays of various kinds resulted in the data collection occuring very late in the term, at a time when many students were involved in preparing for term papers and exams. A hiring freeze in the University prevented the Audio-Visual Services Department in the Library from replacing a photographer position, and thus the production of the slide-tape was delayed to some extent. Mix-ups in the timing and content of the ad for the student newspaper caused delays in publicizing the slide-tape presentations.

The population for participants in the study was limited to

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juniors, seniors, and graduate students, since freshmen and sophomores at this time had already been introduced to principles of subject searching through the Library Research Workbook Pilot Project, then in its second year of implementation. The population was not limited as to discipline, since we assumed that undergraduates were likely to use the catalog regardless of subject specialization.

Students signed up for the slide-tape showings at the Library's administrative offices and by phone. Follow-up letters were sent reminding the students of the date, time, and place of the sessions. The final number of respondents included 81 students. Seven half-hour presentations including from 6 to 21 participants were given by Frost and her research assistant. (An additional half-hour was set aside in each presentation to allow for late-comers and for technical difficulties). In the time allotted, 1) students were informed briefly of the purpose of the study, 2) a pre-test was administered to test previous knowledge of LCSH and principles of subject searching, 3) the slide-tape (lasting 11 minutes) was shown, 4) a post-test was administered, covering the same areas as the pre-test, but in a different format, 5) evaluation forms for the slide-tape were distributed, and 6) students signed up for their checks, which had to be processed by the University, and which were mailed out a few weeks later.

Development of Research Instruments

The slide-tape, the pre-and post tests to evaluate the effectiveness of the slide-tape, the forms for students' evaluation of the slide-tape, and the faculty and student questionnaires were developed by Professor Frost. In designing the slide-tape, emphasis was placed on presenting principles of subject searching in a brief and attractive fashion to sustain the interest of undergraduate and graduate students. Professor Frost wrote the narrative, decided on inclusion of the visuals, and directed and edited the production. The Audio-Visual Services Department of the Library provided the technical production (photography, graphics, narration, synchronization, etc.).

THE LIBRARY RESEARCH WORKBOOK CHAPTER

Population and Sample for the Study

Students enrolled in two UH-UP core English courses during the Fall term of 1984 and Spring term of 1985 constituted the population for this part of the study. The total population of students enrolled for these two terms was 1337. Of these, 927 completed the pre-test, and 661 completed the post test. All students enrolled in the two courses were required to complete the Workbook, and selected students were asked to take pre- and post tests to measure their library skills competency before and after completion of the Workbook.

Development of Research Instruments

C. Brigid Welch, Coordinator of User Education at the Library, and Professor Frost prepared a revision of the previous Workbook sections on catalog use. The Library's User Education Workbook Task Force, which had developed the first edition of the Workbook, assisted in further revision of this and other sections. The new chapter on catalog use (based on the previous edition of the Workbook) was revised to emphasize principles of subject searching skills that are applicable to both card and online formats.

Pre-and post-tests for the Workbook were developed by the Workbook Task Force and were based on questions included in previous terms. Thus, questions reflecting the new material in the revised Workbook were not included.

Pre-tests were administered towards the beginning of the term. Post-tests were administered after students had completed the Workbook. Results were tabulated by the University's Test Scoring and Analysis Department.

FINDINGS

Faculty Questionnaire

Profile of Respondents

As stated earlier, the faculty survey was intended to target those disciplines which we assumed would be most likely to use monographic literature, and therefore would also be likely to use the library's catalogs. In our sample of 112 respondents, Humanities and Fine Arts, which is 40% of the total faculty population, was 37% of the sample. Social Sciences, which is only 12% of the total population, was also 37% of the sample. Business Administration was 11% of the total population and 9% of the sample. Education was 9% of the total population, and 9% of the sample. Social Work was 3% of the total population and 6% of the sample.

Assistant professors, who are 31% of the total faculty population, were 41% of our sample. Associate professors, who are 32% of the total, were 27% of our sample. Full professors, constituting 35% of the total faculty population, were 30% of our sample. For two respondents (1.8%) the rank could not be determined. The rank of instructor, not included in the sample, constitutes 2% of the total faculty population.

Faculty Use of Library and Catalogs

In presenting the findings reported in this study, we must emphasize that a survey methodology which relies on users' recall of catalog use is a less reliable indicator of use than methods such as transaction analysis and interviews of users who have just

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completed a search at the catalog.

As expected, faculty use of the library was substantially less frequent than shown in the student sample. In contrast to the 64% of students who reported coming to the library two or more times a week, only 23% of the faculty indicated this frequency, while 39% reported a frequency of once a week, 23% once a month, and 13% less than once a month. Some faculty members noted that they sent their research assistants to the library.

Broken down by rank, the data show a slightly higher use by assistant professors compared with the other two ranks. By college, as might be expected, the frequent users of the library are the humanities and social sciences faculty. These two groups were shown to be twice as likely to visit the library at least once a week as the other colleges.

A total of 82% of the faculty reported some use (either "every visit", "frequently", or "occasionally") of the online catalog, as compared with a similar aggregate figure (85%) for the card catalog. These figures bear a striking resemblance to the aggregate totals for student use of card and online catalogs, although direct comparisons cannot be made owing to differences in the wording of the two questionnaires. A larger percentage of the faculty reported using the catalog during each library visit (28%) than was the case with the card catalog (19%); however, roughly the same percentages (30% for card, 28% for online) were reported for "frequent" use. A slightly smaller percentage (14%) reported "rarely or never" using the card catalog than was the case for the online catalog (18%).

Kidston's research findings remind us that terms such as "frequent", "occasional", and "seldom" have different meanings for different individuals. [7]. We should therefore view the data in this catalog use study as revealing only broadly defined patterns of use.

Associate professors were somewhat more likely to use the online catalog frequently (i. e, "frequently" or "every visit"). By college, the Social Sciences faculty were the most frequent users, but not by a large margin. While frequency of card catalog use was about the same for each rank, the data show that by college, the heaviest users of the card catalog by far are faculty members in Humanities and the Fine Arts. Sixty-five per cent of the humanities respondents considered themselves frequent users of the card catalog (i.e., "frequent" or "every visit"). The next highest groups were Business Administration (50%) and Social Sciences (42%).

Those faculty who were frequent users of the library were also most likely to be frequent users of the online catalog, but the same pattern was not apparent for card catalog use.

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Faculty members who came to the library 2 or more times a week, and those who came once a month used the card catalog with equal frequency.

It was not necessarily the case that frequent users of the online catalog were also frequent users of the card catalog. Of those faculty members who said they "rarely or seldom" use the computer catalog, 78% said that they used the card catalog frequently ("frequently" or "every visit".) On the other hand, 69% of those who "rarely or never" use the card catalog are frequent users of the online catalog. Some faculty members noted that they used the card catalog by necessity because not all materials were listed in the online catalog.

Dial-in access to the library's catalog through a personal computer had been made available just weeks before the questionnaire was mailed out, and we were interested in the level of use, however slight, of this feature. Since this feature had not yet been publicized, it was hardly surprising that a total of only 4% reported using the dial-in access either rarely, occasionally, or frequently. More interesting was the finding that 54% of the faculty said that they owned a personal computer, but had not yet dialed into the library's catalog. A number of respondents added, however, that they had no modem.

With the exception of business administration, a majority of faculty members in each college said that they owned a personal computer. In our sample, full professors (66%) were more likely to own a personal computer than were the less senior faculty (57% of associate professors, 54% of assistant professors).

Interest in the dial-in feature was high, as shown by some of the comments, e.g., "I didn't know this was available. Should be highly publicized!" and "I would [use dial-in access] but didn't know it was up and running."

Faculty Use of the Subject Search

As expected, faculty use of subject searching in both card and online catalogs was not extensive. Only 22% reported searching by subject on a frequent basis in the online catalog, and 25% in the card catalog. Subject searching on an occasional basis was reported for 37% of the faculty for the online catalog, and 41% for the card catalog. About one third of the sample (40% for online, 34% for card catalog use) reported that they rarely or never search by subject in the catalog.

Previous research has indicated that the higher the level of the user's expertise, the less interest the user is likely to have in subject searching in the catalog. Our data, however, showed that faculty members in the highest rank - full professors - were twice as likely to consider themselves as frequent subject searchers in the online catalog than the assistant and associate ranks. In card catalog use, professors were again the most frequent users, though by not as

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large a margin.

Those faculty who were frequent users of the online catalog were more than twice as likely to be frequent users of the subject search. The margin was not as great in the case of frequent use of the card catalog, (58% of frequent users of the card catalog were were also frequent subject searchers).

In comparing subject searching use in the online catalog with subject searching in the card catalog, we found that a little over half of the frequent (i.e. "frequent" or "every visit") users of the online catalog subject search were also frequent users of the card catalog subject search. The pattern was approximately similar for occasional or infrequent ("rare or never") use. Of equal interest, on the other hand, were the 51% of frequent or occasional users of the card catalog subject search who seldom or never use the online subject search, and the 37% of frequent or occasional users of the online subject search who seldom or never search by subject in the card catalog. One faculty member commented in response to this question that the online subject search is "not reliable at all".

By college, those who reported using the subject search on at least an occasional basis (i.e., occasionally, frequently, or always) were Social Work (71% for online and card), Business Administration (70% for online and 58% for card), Humanities and Fine Arts (65% for online and 70% for card), and Education (50% for online, and 55% for card).

Keyword title searching is often used as a substitute for or supplement to controlled subject searching. Thirty five per cent of those using the online catalog reported using this type of search frequently or always, while 30% indicated occasional use, and 33% rarely or never.

One faculty member from Social Sciences added that if he were doing a subject search, he always used the keyword approach. Another mentioned using the keyword title search for titles of known items.

About 40% of the faculty members from Education, Social Work and Social Sciences reported rarely or never using the keyword search, as compared with only 24% of Humanities and Fine Arts, and 0% of Business Administration. By rank, 49% of assistant professors reported rarely or never using keyword search, as compared with 29% of associate professors and only 12% of full professors. On the other hand, of the 8 faculty members who reported "always" using keyword search, 6 were assistant professors. For frequent use of the keyword search, the distribution was about the same for each rank.

We assumed from the outset that most faculty would find relatively

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little use for subject searching in the catalog, since individuals at this level of expertise in their fields are likely to be familiar with the monographic literature in their discipline. It did seem, however, that there might be instances in which faculty would find a subject search useful when looking for materials in a less familiar area. We asked faculty when they were most likely to use a subject search in the catalog. A relatively large percentage (46%) said that they would use a subject search for interdisciplinary research. By college, those disciplines which showed the greatest use of subject searching for this purpose were Humanities and Fine Arts (56%), and Business Administration (50%). Somewhat surprising was the percentage of users (40%) who use a subject search for an update on publications in their own area of specialization. Humanities and Fine Arts and Social Work were the colleges with the greatest percentage of their respective populations (50% and 57%) showing an interest in this use of the subject search. By rank, the findings were somewhat surprising: 61% of full professors as compared with 40% of associate and 33% of assistant.

Another category was "familiarization with materials in my discipline, but outside my current area of specialization"; 40% reported this use. Twenty one per cent used the subject search to gain familiarization with materials outside their own discipline. Roughly one quarter of the faculty members in Social Sciences, Humanities and Fine Arts, and Education showed an interest in this use, while hardly any in Business Administration and Social Work (8% and 0% respectively).

Faculty members were invited to supply other reasons for use of the subject search. Several indicated that they used the subject search to locate a known item, if the name of the author or title were not available. A number of others said that they used the subject search for research projects. Another noted use of subject searching "to select subject classifications for shelf search".

Although we did not consider it appropriate to "test" faculty members on their awareness of LCSH as a source of controlled terms, we did attempt to ascertain the extent to which faculty members actually used LCSH in their subject searching. One question asked faculty about their source of terms used when searching the catalog by subject. A majority (56%) said that their source was "browsing under words that come to mind". Associate professors were most likely to use this source of terms (73% of this population), as compared with about 50% of the assistant professors and 52% of the full professors. Faculty in Social Sciences (63% of this population), Humanities and Fine Arts (59%), and Education (55%) were the most frequent users of this source.

Reference sources in their respective disciplines were a source for 50% of the respondents; with about the same levels of use for all disciplines and ranks. Thirty per cent used subject headings from a catalog record identified as being on their subject. About 39% of full

professors used this approach as compared with 30% of associate and 24% of assistant professors. By discipline, about half of the the Business Administration and Education faculty sampled used this approach, as compared with about one third of the Humanities and Fine Arts faculty, and one fourth of Social Sciences.

Only 21% of the respondents reported using LCSH as a source for subject terms. The distribution across ranks was about equal. About one third of the (relatively small) sample of Business Administration faculty members used this source, as compared with about one quarter of Humanities and Fine Arts and 17% of Social Sciences populations.

It was interesting to learn that for at least 11% of the faculty sample, one source of terms was "suggestions from librarians familiar with my subject area". Faculty in Business Administration and Education were the more frequent users of this approach. By rank, junior faculty seemed far less inclined to seek help from librarians in this regard than associate or full professors.

When asked to supply other sources of subject terms, one faculty member added simply, but revealingly, "Guess!" Another said, "I'm cross discipline trained and library trained - I use synonyms."

We asked which enhancements faculty would find most useful to improve subject access in the catalog. Faculty members were in agreement with the student sample in listing as their first choice (55%) the Boolean search capability of combining search terms. While the sample of faculty members from Business Administration was small (12), the degree of enthusiasm for this feature was nonetheless noteworthy: 11 of 12, or 92% from the sample for this college listed Boolean search as a desired feature.

The other two most popular categories - display of subject terms related to the search (45%) and provision of a brief summary of the book's content (41%) were also those enhancements in the top three choices of the student sample. The level of interest in some of the other enhancements was also remarkably similar to that indicated in the student responses. For example, "subject headings would give clearer description of what the book is about" was 25% for faculty, and 24% for students; "more detailed coverage for each book" was 13% for faculty, and 13% for students, and "more up-to-date terms" was the last choice for both samples: 6% for both faculty and students.

One area of difference between the two samples was the enhancements which would have the catalog expand or limit the search. Faculty were more interested in being able to expand a search (28%) than in limiting it (11%), while the reverse was true for the students (25% for limit, and 15% for expand). It should be noted, however, that precise comparisons of student and faculty responses cannot be made, due

to differences between the two questionnaires. In response to the feature limiting a search, one faculty member from Social Sciences noted "too few has always been my problem". Faculty members in the Humanities and Fine Arts showed the least interest in limiting a search, but on the other hand, Social Sciences faculty showed the greatest interest in expanding a search.

A few faculty members added that they would like to see access to journals (presumably journal articles) as an improvement to subject searching. "Periodicals are a mess! Integration of them into the system would help!"

We expected that a large number of faculty members would find relatively little use for subject searching (or for any other kind of catalog search, for that matter), because of a heavy reliance on journal literature in the faculty member's own area of specialization. In fact, only 22% said that they seldom or never use the subject search in the catalog because most of the information they need is in journal articles. One faculty member explained, "My most recent work was on organizational cynicism in medical schools, probation departments, etc. - almost all were in journals." Another said that data base search facilities of the Library (for journal article retrieval) were more valuable than the catalog in locating needed materials.

A greater percentage of faculty members (32%) attributed their lack of use of the subject search to the fact that they usually find what they want by author or title. "I usually know what I'm looking for," commented one respondent. A faculty member in the humanities noted, "Author searches - if you know the people in your field [an author search can] help you stay up with what the productive people are doing."

Somewhat surprising was the relatively small percentage (14%) who said that they were already familiar with the literature in their discipline as well as the equally small percentage (13%) who said that their subject terms were too specific for the catalog. About 18% attributed their lack of use to previous subject searches which were unproductive. On humanities faculty member complained,"I have attempted a subject search and couldn't locate a book only to find it catalogued under a completely different set of key words. After this happens a couple of time it makes you stick to author searches." Only 5% of the respondents said that it would be difficult to think of what subject terms to search under.

When asked for other reasons for lack of use of the subject search, several faculty members complained about the fact that the online catalog was incomplete. (At the time of the study, loading and indexing software difficulties prevented the Library from adding recent titles to the online catalog.) One Social Sciences faculty member observed

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that there was some advantage to browsing in the card catalog: "In general, searching a few inches each way from a specific card is useful - cannot easily do quickly, sampling on computer."

Student Questionnaire

Profile of Respondents

Of the 81 students who participated in the survey, 29 (36%) were seniors, 22 (27%) were juniors, and 21 (26%) were graduate students. Nine students (11%) failed to indicate their status.

The representation among disciplines tended to reflect the University's strength of attraction to students in technical and professional areas of study. Natural Science and Mathematics (which includes computer science) was represented by 20 students, or 25% of the sample. Engineering students were the second largest group, with 15 students (19%). Humanities and Fine Arts was third with 12, or 15%, but of the 12 students in this area, five were in Radio and Television Communications. Business Administration was fourth, with 11 (14%). Other areas represented included: Social Sciences (7%), Technology (6%), and Architecture (1%). Not represented were the colleges of Hotel and Restaurant Management, Law, Optometry, and Pharmacy.

It is obvious to the casual observer that student use of the UH-UP Library is high, and this was reflected by the sample in the study: 64% of the student respondents stated that they came to the Library two or more times a week, and 25% once a week. Only 10% reported using the Library about once a month. Graduate students were more frequent library users than juniors and seniors: 86% of the graduate students sampled said they used the Library two or more times a week, as compared with 59% each for juniors and seniors. Students in the Business Administration sample had the highest percentage of respondents (82%) indicating library use two or more times a week, followed by Technology (80%), Natural Science and Mathematics (70%), and Humanities and Fine Arts (67%).

Student Use of the Library and Catalogs

Responses indicate, as would be expected, that the online catalog is used more frequently than the card catalog. However, the card catalog still receives heavy use. Since at the time of the study, the online catalog provided only a partial listing of the Library's holdings, the level of card catalog use is not surprising.

While 32% of the student sample reported using the online catalog frequently, only 19% reported frequent use of the card catalog. On the other hand, 47% reported occasional use of the online catalog, while 59% reported this frequency of use for the card catalog. The percentages of non-users of the online and card catalogs were about equal, with 16% and 20% respectively. Approximately 5% reported using

the online catalog every library visit, with 3% for the card catalog. Thus we can say that almost the same percentage of students use either the card or the online catalog to some extent (i.e. either "occasionally, frequently, or every visit"); but students make more frequent use of the online catalog.

Frequency of card catalog use increased with rank: 14% of the juniors were frequent users (i.e. "frequently" or "every visit"), as compared with 21% of the seniors, and 29% of the graduate students. Thirty-two percent of the juniors said they never used the card catalog, as compared with 21% of seniors and 10% of juniors. In contrast, seniors were the most frequent users of the online catalog (49%), as compared with graduate students (38%), and juniors (23%).

By discipline, the most frequent users of the card catalog were in Humanities and Fine Arts or Social Sciences. In some disciplines, a large percentage of students said they never used the card catalog: 100% for Business Administration, 93% for Engineering, and 85% for Natural Sciences and Mathematics.

In online catalog use, 50% of the (relatively small) sample of students in Social Sciences used the online catalog frequently or every visit, with 42% for the Humanities and Fine Arts, 40% for Natural Sciences and Mathematics, and 27% for Engineering and Business Administration.

Of those students who reported visiting the Library two or more times a week, 33% said that they use the online catalog frequently or every visit, while 21% used the card catalog with this frequency. Of those students who are frequent users of the online catalog, only 27% are also frequent users of the card catalog, while 62% of the frequent online catalog users are only occasional users of the card catalog.

Student Use of Subject Search

Among those students who use the online catalog, the data suggest a preference for title and subject searches. About 16% reported using a title search "always", while 20% reported always using the subject search. In a similar pattern, 43% reported a frequent use of title search, 34% a frequent use of subject search, while 26% indicated this frequency of use for author search. On the other end of the scale, only 4% of the students stated that they never searched by title in the online catalog, while 11% claimed this for a subject search, and 10% for an author search.

Juniors were the least frequent users of author search (12% indicated using it frequently or always), as compared with seniors (42%) and graduate students (39%). Graduate students were the least frequent users of subject search (12% for frequently or always), as compared with juniors (65%) and seniors (81%). As for title search, graduate students

were by far the most frequent users (83% indicating using it frequently or always), as compared with seniors (58%), and juniors (47%)

By discipline, 60% of the students in Humanities and Fine Arts said they frequently search by author, as compared with 33% in Engineering and in Natural Sciences and Mathematics, 25% in Business Administration, 20% in Social Sciences, and 15% in Engineering.

Title searches were the most prevalent in Business Administration (75% for frequently or always), followed by 68% for Education, 67% for Natural Sciences and Mathematics, and 50% for Humanities and Fine Arts.

Humanities and Fine Arts, and Engineering had the largest percentages (ca. 70%) of frequent users of the subject search, followed by Natural Sciences and Mathematics (50%), and Education (44%). Frequent users of the online catalog were most likely to be the ones to search frequently by subject (67%) and title (63%).

Two questions in the student questionnaire were concerned with users' response to a subject search failure in the online catalog. Students were asked what they did when they were unable to find what they wanted using a subject search. Multiple answers were possible. From the choices given, 38% said they would try an author or title approach. Thirty-two per cent would ask a librarian for help. Only 3% claimed they would give up their search. Seniors seemed most likely to ask the librarian for help: 45%, as compared with 18% of the juniors and 14% of the graduate students.

In a related question, students were asked what they did when they keyed in a subject heading that did not retrieve any items. This question was posed in part to see if students assumed that a zero hit rate indicated that the library had no materials on the subject requested. In fact, only 3% made such an assumption. Two responses, 1) search under other terms which the student thought might be used (34%) and 2) check to see if the Library uses another term for this subject (15%) indicated some degree of willingness to try alternative search terms. The response to the option of "checking the same heading in the card catalog" (18%) indicates some degree of awareness that the online catalog contains only a partial listing of the library's holdings. In this instance, only 13% said they would ask the librarian for help.

To gauge users' preferences for catalog enhancements, various options for improvement of subject searching were presented for selection. No overwhelming preference emerged. Most frequently requested (32%) was the Boolean search capability. (Fortunately, this feature was scheduled for implementation a few months after the time of the survey.) The second most popular feature (31%) "catalog listing for each book would give a brief summary of the book's content" is one which some suggest could be feasible with the cooperation of publishers [8,

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p. 14]. Close behind (29%) is a feature ("see a list of terms which the catalog uses as subject headings") that is closely related to the one most frequently requested in the 1982 CLR study of online catalogs ("ability to view a list of words related to my search words") [1, p. 133].

In the second tier of level of popularity were system features to suggest how to limit a search (25%), and to improve subject terminology ("subject headings would give a clearer description of what the book is about" 24%).

Slightly less popular were enhancements to suggest ways to expand a search (15%), and to provide a more exhaustive level of subject coverage (13%). Clearly unnecessary for most students was the improvement involving increased currency of subject terms (6%). Seniors showed twice as high an interest as the other two ranks in a list of terms related to their search, in more detailed coverage, and in Boolean searching.

To address non-use of subject searching, we asked those students who said they seldom or never search by subject in the online catalog to select from a list of possible reasons. Of these, a majority of students (69%) said they usually find what they want by searching by author or title. Only 6% attributed their lack of use to a previous unsuccessful search, while 13% felt they "probably wouldn't be able to think of what subject terms to search under."

Pre- and Post-Tests to Measure Effectiveness of Slide-Tape

The primary purpose of the slide-tape presentation was threefold: 1) to instill in students the importance of LCSH in a controlled subject heading search in card and online catalogs, 2) to convey principles of keyword searching, controlled vocabulary, and specific entry, and 3) to provide basic information needed for the use of LCSH. The pre- and post-tests were designed to ascertain the extent to which the slide-tape accomplished these objectives.

Three content areas were tested: 1) keyword search, 2) specific entry and 3) LCSH as a source of subject terms. In all three questions, students scored significantly higher on the post-test, after having viewed the slide-tape. In the keyword search question, 30% of the students answered the question correctly on the pre-test, compared with 72% and 74% on corresponding post-test questions. A similar level of improvement could be seen on the question on LCSH: 40% for the pre-test question, 64% and 83% for the post-test questions. For the question on specific entry, the pre-test percentage was 70%, and the post-test 86%. In one additional question on the post-test, students were asked to identify authorized search terms from an excerpt from LCSH. About 79% of the students identified the authorized

terms correctly; only 12% incorrectly identified an unauthorized term.

Slide-Tape Evaluation by Students

Students who viewed the slide-tape were asked to evaluate the presentation in terms of its overall and specific objectives. On the evaluation form, students were told that the overall objective was to explain techniques for searching the catalog for materials on a topic. Of the 81 students who viewed the tape, 41 (51%) felt that the overall objective was achieved "very well", while 48% judged the presentation to be "adequate" in this regard, and only one student felt that the objective was achieved "little or not at all."

One specific objective of the slide-tape was to explain how to identify correct subject terms in the catalog using LCSH. Fifty-seven per cent of the students rated achievement of this objective as "very well", and 43% as "adequate". The objective of explaining the concept of specific entry ("how to suit the term to the topic") was achieved "very well" according to 47% of the students. An equal percentage of students rated the attainment of this objective as "adequate", and 6% rated it as "little or not at all". The objective of explaining how to use key word computer search techniques received almost the same rating, with 47% for "very well", 48% for "adequately", and 5% for "little or not at all".

Students were also asked to evaluate the slide-tape in terms of format. All students felt that the visuals and graphics were clear; 95% felt that the sound-track was clearly understood. The timing of the slide-tape was rated as "too fast" by 32% of the students, "too slow" by 6%, and "appropriate" by 62%.

In addition to the evaluation areas just listed, students were also given an opportunity to provide free-form comments. A number of students felt that the tape should have included more examples to illustrate the principles and techniques explained, while others (not as many) felt that there were too many examples. Opinions also differed as to whether the tape was too fast or too slow, whether it should be lengthened or shortened, and the amount of coverage needed for card and online searching.

In general, the students appeared to take very seriously their responsibility to provide critical feedback on the effectiveness of the presentation. We were pleased with the amount of constructive criticism that was offered. We were particularly heartened by the high level of approval of the tape as a learning tool, all the more so since catalog use instruction and LCSH in particular are not subjects which can be expected to generate much interest on the part of students or other users. Some comments are included below:

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"The slide-tape was very informative. I hope you will consider showing it in the library tour."

"The slides have provided very useful information for me. I will start using the system available more effectively" (Junior, Electrical engineering)

"It was good. I won't have any difficulty anymore when doing a research paper." (Senior, Civil Technology)

"More brief [presentations] like this will encourage the students to attend such programs". (Graduate, Biology)

"The slide-tape presentation was very good. May I suggest that more of the information shown here be shared with the library's public." (Biochemistry)

Library Research Workbook Pre- and Post Tests

As stated earlier, the Library Research Workbook has been used in a pilot program to teach library research skills to students enrolled in two core English courses. For this study, we revised portions of the first edition of the Workbook in order to treat subject searching as a process applicable to both card and online use. In both editions of the Workbook, a comparison of pre- and post-tests indicated a substantial improvement of catalog use skills, particularly in regards to awareness of the role of LCSH.

We also compared pre- and post-tests results of the two editions. We had hoped that the revised edition would result in higher scores, but instead the post-test scores (for questions on catalog use) in the second edition were somewhat lower than the corresponding scores found in the first edition (an average of 4% lower in the Fall 1984 term, and 2% lower in Spring 1985). A slight decline could be seen, however, not only in questions covered by the revised portions of the chapters, but in unrevised areas as well. It may be that the overall slight decline in post-test scores is attributable to substantive changes in the way in which the Pilot Project was administered during the terms in which the revised edition of the Workbook was used. While the content of the Workbook is determined solely by the Library, the use of the Workbook in courses and the administration of the pre- and post-tests is governed by the English Department.

Even in the lower scores of the revised edition, however, the increase in percentage of correct answers is dramatic. On the two questions on LCSH as a source of controlled terms, the pre-test scores for the two terms were 37% and 34%, while the post-test scores were 78% and 75%.

SUMMARY AND CONCLUSIONS

This research study had in mind four concerns relating to subject searching in online catalogs: 1) faculty and student use of subject searching in library catalogs, 2) users' knowledge and use of LCSH in a controlled subject heading search, 3) strategies for teaching effective subject searching, 4) users' preferences for improvements to achieve more effective subject searching in catalogs. Key questions addressed in this study are listed below with relevant findings from our research:

1. Use of Subject Searching in Library Catalogs

1.1 How extensive is student and faculty use of subject searching?

A majority of students make frequent use of subject searching. Title searching is also frequently used. As previous studies have indicated, faculty members make relatively little use of subject searching.

1.2 Under what circumstances do faculty members make use of subject searching?

Principle reasons are: interdisciplinary research, update of publications in their area of specialization, and familiarization with materials within the faculty member's discipline, but outside the current area of specialization. To a lesser extent, the subject search is used for familiarization with materials outside the faculty member's own discipline.

1.3 Why is subject searching seldom or never used by some faculty members?

No single predominant reason emerged. About one third of non-users felt that author and title searches were adequate for their needs.

2. Use of LCSH in Catalog Searching

2.1 Are users aware of the catalog's source of controlled subject terms?

Our findings showed that students are largely unaware of LCSH as the catalog's source of subject access points.

2.2 What use is made of LCSH by faculty members?

Faculty members make relatively infrequent use of LCSH and prefer instead to search under terms from reference sources in their disciplines as well as under terms that come to mind.

3. Strategies for Teaching Effective Subject Searching

3.1 Can concepts essential to effective subject searching be conveyed through instructional aids?

Both the Library Research Workbook as well as the slide-tape presentation proved effective in teaching basic skills in subject searching. What the study could not address, however, was the extent to which these skills were actually put into practice. A follow-up study would be useful in this regard.

4. Users' Preferences for Improving the Catalog

4.1 What enhancements would users most like to see to improve subject searching in the library's catalog?

For both faculty and students in our study, the three improvements rated most highly were 1) Boolean search capabilities, 2) display of or access to a list of terms related to the user's topic, and 3) inclusion of a brief summary of the book's content.

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Appendix 1
Faculty Catalog Use Survey Results

1. I come to a UH-UP library (main or branch):

a. two or more times a week.	26	23.2%
b. about once a week.	44	39.3%
c. about once a month.	26	23.2%
d. less than once a month.	15	13.4%
e. other	1	0.9%
Total	112	100.0%

2. I use the library's computerized catalog in a UH-UP library:

a. every library visit	31	27.7%
b. frequently	31	27.7%
c. occasionally	30	26.8%
d. rarely/never	20	17.9%
Total	112	100.0%

3. I use the library's computerized catalog through dial-in access on my personal computer:

a. frequently	2	1.8%
b. occasionally	1	0.9%
c. rarely	1	0.9%
d. never (own a personal computer but have not dialed into library's catalog).	60	54.1%
e. not applicable (do not own a personal computer).	47	42.3%
Total	111	100.0%

4. I use the library's card catalog:

a. every library visit	21	18.9%
b. frequently	33	29.7%
c. occasionally	41	36.9%
d. rarely/never	16	14.4%
Total	111	100.0%

5. When I use the computerized catalog, I search for publications under subject headings (rather than by specific author or title):

a. always	1	1.0%
b. frequently	23	22.3%
c. occasionally	38	36.9%
d. rarely/never	41	39.8%
Total	103	100.0%

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6. When I use the card catalog, I search for publications under subject headings:

a. always	0	0.0%
b. frequently	27	24.8%
c. occasionally	45	41.3%
d. rarely/never	37	33.9%
Total	109	100.0%

7. Under what circumstances are you likely to use the subject search in the catalog: (as many as apply)

a. update on publications in my area of specialization	45	40.2%
b. familiarization with materials in my discipline, but outside my current area of specialization.	44	39.3%
c. interdisciplinary research.	51	45.5%
d. familiarization with materials outside my discipline (e.g., for recreational reading, update on current events).	24	21.4%
e. other (please name)	9	8.0%
f. none of the above; would not find any use for catalog subject search.	9	8.0%

8. When I use the computerized catalog, I search under keyword:

a. always	8	8.7%
b. frequently	26	28.3%
c. occasionally	28	30.4%
d. rarely/never	30	32.6%
Total	92	100.0%

9. When searching the catalog by subject, I have used as a source of subject terms: (as many as apply)

a. reference sources in my discipline.	56	50.0%
b. browsing under words that come to mind.	63	56.3%
c. subject headings found on a catalog record from a book I've already identified as being on my subject.	34	30.4%
d. The Library of Congress Subject Headings List.	23	20.5%
e. suggestions from librarians familiar with my subject area.	12	10.7%

10. Searching by subject in the catalog would be more useful IF: (as many as apply)

a. the catalog listing for each book would give a brief summary of the book's content.	46	41.1%
b. the catalog would suggest how to limit my search if I retrieve too many items.	12	10.7%
c. the catalog would suggest how to expand my search if I retrieve too few items.	31	27.7%
d. subject headings would give a clearer description of what the book is about.	27	24.8%
e. subject headings would give more detailed coverage for each book; e.g., a subject heading for each chapter of a book, instead of for the book as a whole.	15	13.4%
f. I could combine search terms in a single search (Boolean search). For example, if I'm interested in the use of microcomputers in hospitals, I could combine the subject terms for Microcomputers and Hospitals.	62	55.4%
g. the catalog would use terms that are more up to date.	7	6.3%
h. the catalog would display books according to classification numbers; e.g., if I type in a Library of Congress classification number, the catalog would list books our library owns in that subject classification.	23	20.5%
i. the catalog would display a list of subject terms related to my search.	50	44.6%

Answer the following question only if you seldom or never search by subject in the catalog:

11. I seldom/never use the subject search in the catalog because: (as many as apply)

a. I'm already familiar with the literature in my discipline.	16	14.3%
b. most of the information I need is in journals.	25	22.3%
c. I usually find what I want by searching under author or title	36	32.1%
d. it's difficult to think of what subject terms to search under	6	5.3%
e. previous subject searches I've tried have been unproductive.	20	17.9%
f. my subject terms are too specific for the library catalog.	15	13.4%

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Appendix 2
Student Catalog Use Survey Results

1.	I come to this library:			
	a. two or more times every week.		52	64.2%
	b. about once a week.		20	24.7%
	c. about once a month.		8	9.9%
	d. less than once a month.		0	0.0%
	e. never.		1	1.2%
		Total	81	100.0%
2.	I use the library's computerized catalog:			
	a. every library visit.		4	4.9%
	b. frequently.		26	32.1%
	c. occasionally.		38	46.9%
	d. never.		13	16.0%
		Total	81	100.0%
3.	I use the library's card catalog:			
	a. every visit.		2	2.5%
	b. frequently.		15	18.5%
	c. occasionally.		48	59.3%
	d. never.		16	19.8%
		Total	81	100.0%

Answer questions 4-10 only if you have used the library's computerized catalog:

4.	When I use the computerized catalog, I search under an author's name:			
	a. always.		3	4.3%
	b. frequently.		18	25.7%
	c. sometimes		27	38.6%
	d. seldom.		15	21.4%
	e. never.		7	10.0%
		Total	70	100.0%
5.	When I use the computerized catalog, I search under a title:			
	a. always.		11	15.7%
	b. frequently.		30	42.9%
	c. sometimes.		21	30.0%
	d. seldom.		5	7.1%
	e. never.		3	4.3%
		Total	70	100.0%

6. When I use the computerized catalog, I search under a subject heading:

a. always.	14	20.0%
b. frequently.	24	34.3%
c. sometimes.	15	21.4%
d. seldom.	9	12.9%
e. never.	8	11.4%
Total	70	100.0%

7. If I can't find the materials I want using a subject search in the catalog, I usually:

a. ask a librarian for help.	22	32.3%
b. ask my professor for suggestions.	4	5.9%
c. ask another student for suggestions.	0	0.0%
d. try some other source, such as a guide to the journal literature in my field.	8	11.8%
e. try browsing in the stacks.	3	4.4%
f. try an author or title approach.	26	38.2%
g. give up my search.	2	2.9%

8. Searching by subject in the catalog would be easier if: (select three)

a. I could see the list of terms which the catalog uses as subject headings.	20	29.4%
b. the catalog listing for each book would give a brief summary of the book's content.	21	30.9%
c. the catalog would give suggestions on how to limit my search if I retrieve too many items.	17	25.0%
d. the catalog would give suggestions on how to expand my search if I retrieve too few items.	10	14.7%
e. subject headings would give a clearer description of what the book is about.	16	23.5%
f. subject headings would give more detailed coverage for each book; for example, a subject heading for each chapter of a book, instead of for the book as a whole.	9	13.2%
g. I could combine subject terms in a single search. For example, if I'm interested in the subject of microcomputers in hospitals, I could combine the subject headings for Microcomputers and Hospitals to find out what books the library has that are specifically on this subject.	22	32.4%
h. the catalog would use terms that are more up-to-date.	4	5.9%

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9. When I key in a subject heading which does not retrieve any terms, I usually:

a. assume that the library does not have any materials on this subject.	2	2.9%
b. check to see if the library uses another term for this subject.	10	14.7%
c. ask a librarian for help.	9	13.2%
d. check the same heading in the card catalog.	12	17.6%
e. search under other terms which I think might be used instead of this subject heading.	23	33.8%

Answer question 10 only if you seldom or never search by subject in the computerized catalog.

10. I seldom/never use the subject search in the computerized catalog because:

a. I usually find what I want by searching under author or title.	11	68.8%
b. I probably wouldn't be able to think of what subject terms to search under.	2	12.5%
c. I tried a subject search before and wasn't able to find what I wanted.	1	6.3%
d. my topics are too specific to look up in the catalog.	1	6.3%
e. I already know what books are on my subject.	0	0.0%
f. most of the materials I need are articles in journals.	0	0.0%
g. I was taught that you looked up a book by author or title.	1	6.3%
Total	16	100.0%

Appendix 3: Faculty Questionnaire Tables

Table A. Faculty: Frequency of Use of Online Catalog and Frequency of Use of Online Catalog Subject Search

	Subject Search Use				
Catalog Use	Always	Frequently	Occasionally	Rarely/never	Totals
Every visit	0 0.0%	6 19.4%	14 45.2%	11 35.5%	31 100.0%
Frequently	0 0.0%	12 40.0%	9 30.0%	9 30.0%	30 100.0%
Occasionally	1 3.3%	4 13.3%	13 43.3%	12 40.0%	30 100.0%
Rarely/never	0 0.0%	1 8.3%	2 16.7%	9 75.0%	12 100.0%
Totals Row %	1 1.0%	23 22.3%	38 36.9%	41 39.8%	103 100.0%

Table B. Faculty: Frequency of Use of Online Catalog Subject Search and Rank

	Online Catalog Subject Search Use				
Rank	Always	Frequently	Occasionally	Rarely/never	Total
Assistant Professor	0 0.0%	8 18.2%	13 29.5%	23 52.3%	44 100.0%
Associate Professor	0 0.0%	5 18.5%	14 51.9%	8 29.6%	27 100.0%
Professor	1 3.3%	10 33.3%	11 36.7%	8 26.7%	30 100.0%
Undeclared	0 0.0%	0 0.0%	0 0.0%	2 100.0%	2 100.0%
Totals Row %	1 1.0%	23 22.3%	38 36.9%	41 39.8%	103 100.0%

Table C. Faculty: Frequency of Use of Card Catalog Subject Search and Rank

	Card Catalog Subject Search Use			
Rank	Frequently	Occasionally	Rarely/never	Total
Assistant Professor	10 22.7%	18 40.9%	16 36.4%	44 100.0%
Associate Professor	6 20.0%	16 53.3%	8 26.7%	30 100.0%
Professor	10 30.3%	11 33.3%	12 36.4%	33 100.0%
Undeclared	1 50.0%	0 0.0%	1 50.0%	2 100.0%
Totals Row %	27 24.8%	45 41.3%	37 33.9%	109 100.0%

Table D. Faculty: Frequency of Use of Online Catalog Subject Search and Frequency of Use of Card Catalog Subject Search

	Card Catalog			
Online Catalog	Frequently	Occasionally	Never	Total
Always	1 100.0%	0 0.0%	0 0.0%	1 100.0%
Frequently	13 56.5%	6 26.1%	4 17.4%	23 100.0%
Occasionally	6 15.8%	22 57.9%	10 26.3%	38 100.0%
Rarely/never	5 12.2%	14 34.2%	22 53.6%	41 100.0%
Totals Row %	25 24.2%	42 40.8%	36 35.0%	103 100%

Appendix 4: Student Questionnaire Tables

Table E. Students: Frequency of Online Catalog Use and Frequency of Online Catalog Subject Search

	Subject Search Use					
Catalog Use	Always	Frequently	Sometimes	Seldom	Never	Total
2 or 3 times a week	3 75.0%	1 25.0%	0 0.0%	0 0.0%	0 0.0%	4 100.0%
Once a week	6 23.1%	10 38.5%	6 23.1%	1 3.8%	3 11.5%	26 100.0%
Once a month	4 10.5%	13 34.2%	9 23.7%	7 18.4%	5 13.2%	38 100.0%
Less than once a month	0	0	0	0	0	0
Never	1 50.0%	0 0.0%	0 0.0%	1 50.0%	0 0.0%	2 100.0%
Totals Row %	14 20.0%	24 34.3%	15 21.4%	9 12.9%	8 11.4%	70 100.0%

Table F. Students: Frequency of Online Catalog Subject Search Use and Rank

	Online Catalog Subject Search Use					
Rank	Always	Frequently	Sometimes	Seldom	Never	Total
Juniors	5 29.4%	6 35.3%	2 11.8%	3 17.6%	1 5.9%	17 100.0%
Seniors	7 26.9%	14 53.8%	4 15.4%	1 3.8%	0 0.0%	26 100.0%
Graduate	1 5.6%	1 5.6%	7 38.9%	4 22.2%	5 27.8%	18 100.0%
Undeclared	1 11.1%	3 33.3%	2 22.2%	1 11.1%	2 22.2%	9 100.0%
Totals Row %	14 20.0%	24 34.3%	15 21.4%	9 12.9%	8 11.4%	70 100.0%

Table G. Students: Frequency of Use of Online Catalog Subject Search and Frequency of Use of Online Catalog Title Search

	Title					
Subject	Always	Frequently	Sometimes	Seldom	Never	Total
Always	2 14.3%	4 28.6%	4 28.6%	2 14.3%	2 14.3%	14 100.0%
Frequently	2 8.3%	10 41.7%	11 45.8%	1 4.2%	0 0.0%	24 100.0%
Sometimes	2 13.3%	9 60.0%	4 26.7%	0 0.0%	0 0.0%	15 100.0%
Seldom	2 22.2%	4 44.4%	2 22.2%	1 11.1%	0 0.0%	9 100.0%
Never	3 37.5%	3 37.5%	0 0.0%	1 12.5%	1 12.5%	8 100.0%
Totals Row %	11 15.7%	30 42.9%	21 30.0%	5 7.1%	3 4.3%	70 100.0%

PRE-TEST

1. Where would you look to find the following items? (Matching--select the MOST APPROPRIATE answer. Answers may be used more than once.)

____ a book by Charles Dickens

____ a book about Charles Dickens

____ a journal article about tax reform

____ a list of subject words used in the card and online catalogs

A. The subject section of the library catalogs

B. Reader's Guide to Periodical Literature

C. The Library of Congress Subject Headings List

D. The author/title sections of the library catalogs

Place an X in front of the MOST APPROPRIATE answer.

2. A "Key-word" search in the library's catalog enables you to:

____ a. find a book listed by any one significant word

____ b. find a book listed under its complete heading in the online catalog

____ c. find a book listed in the card catalog under any one significant word

____ d. do not know

3. If you were looking in the catalog for materials on "Blacks in the United States," the best subject term to search under would be:

____ a. Afro-Americans

____ b. Minorities

____ c. Blacks in the performing arts

____ d. do not know

4. When searching the card and online catalogs by subject, you can look under

____ a. any term you think of for your topic

____ b. any term found in the Webster's Unabridged Dictionary

____ c. only those terms listed in the Library of Congress Subject Headings

____ d. any term found in your textbook

____ e. any term given by your instructor

____ f. do not know

POST-TEST

1. Matching -- select the MOST APPROPRIATE answers. Answers may be used more than once.

___search approach to use in the catalog if you want to find all the subject headings which contain the word politics

___a list of subject terms which may appear in the card or online catalogs

___source used by librarians to assign subject terms in the catalogs

___subject term to search under if you are looking for books on the subject of cars

___best search approach to use in the catalog if you want to find out what books the library owns with the word politics in their title.

A. Subject keyword search

B. Reader's Guide to Periodical Literature

C. Automobiles

D. Library of Congress Subject Headings List

E. Car fenders

F. Motor vehicles

G. Title keyword search

2. Listed below is an excerpt from the Subject Headings List:

Nuclear power
see Atomic power

Atomic power
sa Atomic aircraft

x Nuclear power
xx Atomic energy

Which of the following are terms that you can use to search in the Library's catalogs? Mark these terms with an X.

___Atomic power

___Nuclear power

___Atomic aircraft

___Atomic energy

SLIDE-TAPE EVALUATION

1. The overall objective of this slide-tape presentation was to explain techniques for searching the catalog for materials on your topic. In your opinion, did the presentation achieve this objective:

____Very well

____Adequately

____Little or not at all

2. The specific objectives of the slide-tape were to explain:

a) How to identify correct subject terms used in the catalog by using the Subject List. Was this objective achieved:

____Very well

____Adequately

____Little or not at all

b) How to suit the term to the topic: selecting the best heading in terms of scope. Was this objective achieved:

____Very well

____Adequately

____Little or not at all

c) How to use keyword computer search techniques. Was this objective achieved:

____Very well

____Adequately

____Little or not at all

3. Were the visuals/graphics:

____Clear

____Difficult to see/read

4. Was the sound-track:

____Clearly understood

____Difficult to follow

43A

5. Was the timing of the slide/tape:

____Too fast

____Too slow

____Appropriate

6. We welcome any additional comments or suggestions you might have which would help us in revising future versions of this slide-tape presentation.

COMMENTS FROM STUDENTS ON SLIDE-TAPE (Included as part of slide-tape evaluation form. Students were asked for additional comments and suggestions.)

The slide show was very informative. I hope you will consider showing it in the library tour.

The slides have provided very useful information for me. I will start using the system available more effectively. (Junior, Electrical engineering)

I think that it is very appropriate as it is. (Senior, Elec. eng.)

I prefer to a more detailed presentation. (Graduate student, Accounting.)

Well made. (Graduate, Industrial engineering).

More brief lectures like this one will encourage the students to attend such programs. (Graduate, Biology)

It's good enough already ! (Graduate, Computer science)

It was good. I won't have any difficulty anymore when doing a research paper. (Senior, Civil technology)

Presentation should be longer. Should avoid librarians' jargon. (Grad., MBA)

The difference between the various key word searches needs to be made clearer. Give more examples. (Senior, Elec. eng.)

Was very informing. (Junior, Elec. eng.)

Does the on-line catalogue give access to searching via the author's name? A complete step-by-step operation of the terminal would have made a good illustration. (Grad., Chemistry)

The transition of the slide, from the pictures of the Card Catalog to the Library of Congress Subject Heading List were rather fast at times. (Senior, Math)

Besides slide-tape presentation, an additional terminal demonstration will be much helpful. (Grad., Mechanical Engineering)

I think the slide was very good. Everything was appropriate. The model/ student was great. Good luck. (Senior, Radio/Television)

1 thought the presentation was very informative and useful. (Grad.

1) A practical tour after such a slide tape presentation to actually look for subject/title keywords & then to actually find the topics would be very useful. 2) The slide tape could be less wordy and stress only on the important issues relevant to this show. (Grad., Petroleum engineering)

The slide-tape presentation was very good. May I suggest that more of the information shown here be shared with the library's public. I haven't taken English here (transfer student) so I never had the UH library orientation that I understand is given to freshmen. Good job! (Biochemistry)

It was good. I hope to have more slide-tape presentations made to bring attention to other ways to find additional information in the library. (Sr., Phys. Ed.)

I would like to see a slide-tape presentation on locating periodicals and other materials aside from books. (Senior, Printmaking)

Need more examples in slide-tape presentation. (Grad., Marketing)

Give more detail in the subject search. Especially, give more example which is different field you give in the material. (Grad., Biochemistry)

Lengthen the tape to cover the areas more thoroughly as these are new techniques. (Junior, Computer science)

If I am right I though I heard a mistake on the tape. Instead of "directories" at a point the tape says "dictionaries." I am not sure. You might want to make sure. [Student was correct. Graphic was since changed to match wording on tape.]
The rest were good. The tape should be run a bit more slower. (Junior, Biology)

I think a complete example showing how to find materials on a subject (from beginning to end) would have better effect. (as opposed to piece-by-piece information. (Grad., Business)

The film presentation was a little to much to comprehend in the time allowed. I would have liked to have seen it again. Otherwise, everything was very informative. (Senior, Journalism)

No comments. An excellent program. (Junior, Elementary education)

Using more than one example to illustrate for each type of procedure. (Grad., Anthropology)

An explanation of operational skills to On-line computer system would be a help addition to the orientation program.

I think you should be more straight-forward in the slide-tape. This is a University not a primary education center (i.e., you do not need to repeat the same thing so many times and using so many examples.) If somebody does not understand them they should watch the tape as many times as needed. However, people who can understand it in a first pass do not have to suffer such a endless repetition.
Now do not get frustrated, just make it a little bit shorter (maybe you could accidentally loose some of the slides!) (Senior, Computer science)

Not so clear, need more examples to illustrate (Senior, Mgt. Information Systems)

Good job; informative. Should be presented to underclassmen who are unfamiliar with proper procedures for using library resources. (Grad., Urban studies)

The section on computer search techniques needs more tangible examples. The part on disadvantages and advantages of computer search techniques was timed too quickly. The lst half of the film was excellent. The voice of the narrator on the film was too monotonous. Thus towards the end of the film I felt sleepy. (It's too sing-songy). (Senior, Sociology)

Short reviews of objectives periodically thru each section of the presentation - (without insulting audiences intelligence). But just as repetitious reminders to reinforce the information. (Senior, Math)

Tape show was slightly too slow for amount of information given. (Senior

Try to explain in more detail and more than once the way the Subject Headings List is organized. (Finance

If the objective is to give a broad overview with the idea of getting a couple of key concepts, the timing is fine. If the objective is for more detailed information to be retained, the pace is too fast.

You should have more details about using all kinds of catalogue that help students to know how to use and can use them. [sic] (Grad, Computet science)

The timing should be slower. The narrator seemed at certain points to have to read rapidly in order to keep up with the pace of the slides. The slide-tape presentation covers a lot of new material; information that I previously was not familiar with. For this reason I would have liked it better if it lasted longer and went slower. The objective was reached. I did learn about searching in the catalogs but the path could have been smoother. (Grad., Education)

Try to use less talking (less repetition). Slow the slides down (maybe cut out the insignificant ones). In the beginning, establish what is being done. ex. whether you are talking about the card catalog or the online. (Senior, Chemistry)

I like the girl. [model] (Grad., Biology)

The slide tape presentation mainly talk about the computerized search. However, the periodical search and card catalog search are not well demonstrated. (Junior, Computer science)

Maybe some more examples would be helpful, also do not stick to the same example because if a spectator doesn't relate to it, he/she may be turned off. Try varying examples. (Grad., Architecture)

It will be helpful for new students to have an access to this tape in order to know exactly how to use the library catalogue system.

Maybe another topic instead of sports. (Senior, Elementary education)

I had the impression that some ways of searching, etc. was over-explained, first with cards and then by computer, so as a result I was a little confused at the end. Also, sometimes the presentation jumped too fast from learning to use the Library of Congress Subject Heading, with examples, to see cards about something, in which the example was not completely clear, maybe because it was almost too fast.

Stress a little more how to look for secondary subject titles, specially on-line. Synonims, etc., could be of help. I was left with the impression that I had to look on the Library of Congress Subject Heading if my topic as such does not appear on the computer, or not with enough sources. (Senior, Finance)

This presentation was very well constructed and presented. (Junior, Elementary education)

Instructional slide tapes/film are generally quite boring to watch and to listen to. As a result most students lose interest in what can be a very informative presentation. I believe this tape incorporated effective visuals and quite a productive flow of information. Slides were very informative, as well as artistically appealing. The narrative was very professional, very smooth. Perfect timing. Some listings on the computer screen were illegible, only because my vision is poor. (Senior, Radio/television)